

**CHAPTER 15, ARTICLE 4.5, SECTION 64439**

**ARTICLE 4.5. TRIHALOMETHANES**

**Section 64439. Requirements.**

Community water systems shall comply with the National Interim Primary Drinking Water Regulations for the control of Trihalomethanes in Drinking Water, Sections 141.2(p), (q), (r), (s) and (t), 141.6, 141.12 and 141.30 of Title 40, Code of Federal Regulations, as published in the November 29, 1979, Federal Register (Vol. 44, No. 231) and revised in the March 11, 1980, Federal Register (Vol. 45, No. 49), the December 16, 1998, Federal Register (Vol. 63, No. 241), and the January 16, 2001, Federal Register (Vol. 66, No. 10).

**NOTE:**

Authority Cited: Sections ~~208100275~~ and ~~4026116385~~, Health and Safety Code.

Reference: Section ~~208100275~~ and ~~4026116385~~, Health and Safety Code

## **CHAPTER 15, ARTICLE 1, SECTION 64400**

### **ARTICLE 1. DEFINITIONS**

#### **Section 64400 . Acute Risk.**

"Acute risk" means the potential for a contaminant or disinfectant residual to cause acute health effects, i.e., death, damage or illness, as a result of a single period of exposure of a duration measured in seconds, minutes, hours, or days.

**NOTE:**

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~, and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010-4039.6116275-116750~~, Health and Safety Code

**Section ~~64400.30~~25. Compliance Period.**

“Compliance period” means a three-year calendar year period within a compliance cycle. Within the first compliance cycle, the first compliance period runs from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; the third from January 1, 1999 to December 31, 2001.

**NOTE:**

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~ and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010116275~~ through ~~4039.6116750~~, Health and Safety Code.

**Section ~~64400.40~~28. Confluent growth.**

“Confluent growth” means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

NOTE:

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~ and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010116275~~ through ~~4039.6116750~~, Health and Safety Code.

**Section 64400.4230. Customer**

“Customer” means a service connection to which water is delivered by a community water system or a person that receives water from a nontransient-noncommunity water system for more than six months of the year.

**NOTE:**

Authority cited: Sections 116350 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116470, Health and Safety Code.

**Section 64400.4432. Detected.**

“Detected” means at or above the detection limit for purposes of reporting (DLR).

**NOTE:**

Authority cited: Sections 116350 and 116375, Health and Safety Code.

Reference: Sections 116275 through 116470, Health and Safety Code.

**Section ~~64400.45~~34. Detection limit for purposes of reporting (DLR).**

“Detection limit for purposes of reporting (DLR)” means the designated minimum level at or above which any analytical finding of a contaminant in drinking water resulting from monitoring required under this chapter shall be reported to the Department.

**NOTE:**

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~ and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010116275~~ through ~~4039.6116750~~, Health and Safety Code.

**Section 64400.38. Enhanced Coagulation.**

“Enhanced coagulation” means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64400.40. Enhanced Softening.**

“Enhanced softening” means the improved removal of disinfection byproduct precursors by precipitative softening.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64400.427. Fluoridation.**

“Fluoridation” means the addition of fluoride to drinking water to achieve an optimal level, pursuant to Section 64433.2, that protects and maintains dental health.

**NOTE:**

Authority Cited: Sections 100275, 116410 and 116375, Health and Safety Code.

Reference: Sections 116410 and 116415, Health and Safety Code.

**Section 64400.45. GAC10.**

“GAC10’ means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64400.47. Haloacetic acids (five) (HAA5).**

“Haloacetic acids (five) (HAA5)” means the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64400.67. Maximum residual disinfectant level (MRDL).**

“Maximum residual disinfectant level (MRDL)” means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64401.65. SUVA.**

“SUVA” means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of a water. It is calculated by dividing a sample’s ultraviolet absorption at a wavelength of 254 nm ( $UV_{254}$ ) (in  $m^{-1}$ ) by its concentration of dissolved organic carbon (DOC) (in mg/L).

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64401.82. Total Organic Carbon (TOC).**

“Total Organic Carbon (TOC)” means total organic carbon in mg/L measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**Section 64401.92. TTHM.**

“TTHM” means total trihalomethanes.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

**CHAPTER 15, ARTICLE 19, SECTION 64464.3****Section 64464.3. Public Notification - Water Quality Failure.**

(a) Unless otherwise directed by the Department, the water supplier shall notify the Department and the persons served by the water system whenever any of the following occurs:

(1) The water supplied to the consumers exceeds the bacteriological quality limits specified in Section 64426.1, or exceeds the MCLs for inorganic chemicals, nitrate, turbidity, ~~trihalomethanes~~ disinfection byproducts, radioactivity, or organic chemicals as specified in Sections 64431, 64439, 64441, 64443, ~~and 64444~~, and 64533, or exceeds the MRDLs for disinfectants in Section 64533.5.

(2) The water supplier fails to comply with a prescribed treatment technique established in lieu of an MCL.

(3) The water supplier violates any schedule prescribed pursuant to a variance or exemption.

(b) The notice to the public required pursuant to paragraph (a) shall be given in accordance with the following methods which are described in 64464.1:

(1) For community water systems:

(A) By Method 2, and by Method 4 or 5; or

(B) If the Department finds that there is no daily newspaper of general circulation serving the area served by the system, by Method 3 and by Method 4 or 5; or

(C) If the Department finds that there is no daily or weekly newspaper of general circulation serving the area served by the system, then by Method 6 or 7 as directed by the Department based on the degree of health risk and the nature of the population served by the system;

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the community water system to carry out such notification required to adequately alert the public to the risk.

(2) For nontransient-noncommunity and transient-noncommunity water systems:

- (A) By Method 2 and by Method 4 or 5; or
- (B) If the Department finds that there is no daily newspaper in general circulation serving the area served by the water system, then by Method 3 and by Method 4 or 5; or
- (C) By Method 6 or 7;
- (D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the nontransient-noncommunity or transient-noncommunity water system to carry out such notification required to adequately alert the public to the risk.

NOTE:

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~, and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010-4039.6116275-116750~~, Health and Safety Code

**CHAPTER 15, ARTICLE 19, SECTION 64464.6****Section 64464.6. Public Notification - Procedural Failure.**

(a) Unless otherwise directed by the Department, the water supplier shall notify the Department and the persons served by the water system whenever any of the following occurs:

(1) The water supplier fails to take and report the required number of bacteriological samples in accordance with an approved sample siting plan pursuant to Section 64422 and as specified in Sections 64423 and 64424 or fails to take and report the required number of inorganic chemical, organic chemical, ~~or~~ radiological, disinfectant, disinfection byproduct, or disinfection byproduct precursor samples, as specified in Sections 64432, 64432.1, 64432.2, 64439, 64441, 64443, 64445, 64445.1, 64445.2, ~~and~~ 64450.1, and 64534 through 64536.6; or

(2) The water supplier or its agent fails to comply with a testing procedure prescribed in 40 CFR part 141; or

(3) The water supplier is operating under a variance or exemption.

(b) The notice to the public required pursuant to paragraph (a) shall be given in accordance with the following methods, which are described in 64464.1:

(1) For community water systems:

(A) By Method 8 and by either Method 10 or 11; or

(B) If the Department finds that there is no daily newspaper of general circulation serving the area served by the system, then by Method 9 and by either Method 10 or 11; or

(C) If the Department finds that there is no daily or weekly newspaper of general circulation serving the area served by the system, then by Method 11 or 12 as directed by the Department based on the degree of health risk and the nature of the population served by the system;

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the

community water system to carry out such notification required to adequately alert the public to the risk.

(2) For nontransient-noncommunity and transient-noncommunity water systems:

- (A) By Method 8 and either Method 10 or 11; or
- (B) If the Department finds that there is no daily newspaper in general circulation serving the area served by the water system, then by Method 9 and either Method 10 or 11; or
- (C) By Method 11 or 12.
- (D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the nontransient-noncommunity or transient-noncommunity water system to carry out such notification required to adequately alert the public to the risk.

NOTE:

Authority Cited: Sections ~~208100275~~, ~~4027116425~~, and ~~4028116450~~, Health and Safety Code.  
Reference: Sections ~~4010-4039.6~~116275-116750, Health and Safety Code

## **CHAPTER 15, ARTICLE 19, SECTION 64465**

### **Section 64465. Notification of an Acute Health Risk.**

When the Department determines that the presence of any contaminant or residual disinfectant occurs at a level posing an acute risk to human health pursuant to Section 64400, the water supplier of a community water system shall give notice to persons served by the system by Section 64464.1(a) - Method 1.

**NOTE:**

Authority Cited: Sections ~~208100275~~, ~~4023.3116375~~, and ~~4028116450~~, Health and Safety Code.

Reference: Sections ~~4010-4039.6116275-116750~~, Health and Safety Code

**CHAPTER 15, ARTICLE 19, SECTION 64468.5****Section 64468.5. Health Effects Language – Disinfectants and Disinfection Byproducts.**

Pursuant to Section 64467, the explanation of potential adverse health effects for disinfectants and disinfection byproducts shall include the following mandatory language for the designated contaminants:

(a) Chlorine: “The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorine is a health concern at certain levels of exposure. Chlorine is added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and is also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chlorine has been shown to affect blood and the liver in laboratory animals. DHS has set a drinking water standard for chlorine to protect against the risk of these adverse effects. Drinking water which meets this DHS standard is associated with little to none of this risk and should be considered safe with respect to chlorine.”

(b) Chloramines: “The California Department of Health Services (DHS) sets drinking water standards and has determined that chloramines are a health concern at certain levels of exposure. Chloramines are added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and are also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chloramines have been shown to affect blood and the liver in laboratory animals. DHS has set a drinking water standard for chloramines to protect against the risk of these adverse effects. Drinking water which meets this DHS standard is associated with little to none of this risk and should be considered safe with respect to chloramines.”

(c) Chlorine Dioxide: “The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorine dioxide is a health concern at certain levels of exposure. Chlorine dioxide is used in water treatment to kill bacteria and other disease-causing microorganisms and can be used to control tastes and odors. Disinfection is required for

surface water systems. However, at high doses, chlorine dioxide-treated drinking water has been shown to affect blood in laboratory animals. Also, high levels of chlorine dioxide given to laboratory animals in drinking water have been shown to cause neurological effects on the developing nervous system. These neurodevelopmental effects may occur as a result of a short-term excessive chlorine dioxide exposure. To protect against such potentially harmful exposures, DHS requires chlorine dioxide monitoring at the treatment plant, where disinfection occurs, and at representative points in the distribution system serving water users. DHS has set a drinking water standard for chlorine dioxide to protect against the risk of these adverse effects.”

**[In addition to this language, systems with a violation at the treatment plant, but not in the distribution system, shall include the language in paragraph (1); systems with a violation in the distribution system shall include the language in paragraph (2) and provide notification pursuant to section 64464.1(a) – Method 1.]**

(1) “The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, and do not include violations within the distribution system serving users of this water supply. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to present consumers.”

(2) “The chlorine dioxide violations reported today include exceedances of the DHS standard within the distribution system serving water users. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including pregnant women, infants, and young children, may be especially susceptible to adverse effects of excessive exposure to chlorine dioxide-treated water. The purpose of this notice is to advise that such persons should consider reducing their risk of adverse effects from these chlorine dioxide violations by seeking alternate sources of water for human consumption until such exceedances are rectified. Local and Department health authorities are the best sources for information concerning alternate drinking water.”

(d) Disinfection Byproducts and Treatment technique for DBPs: “The California Department of Health Services (DHS) sets drinking water standards and requires the disinfection of drinking water. However, when used in the treatment of drinking water, disinfectants react with naturally-occurring organic and inorganic matter present in water to form chemicals called

disinfection byproducts (DBPs). DHS has determined that a number of DBPs are a health concern at certain levels of exposure. Certain DBPs, including some trihalomethanes (THMs) and some haloacetic acids (HAAs), have been shown to cause cancer in laboratory animals. Other DBPs have been shown to affect the liver and the nervous system, and cause reproductive or developmental effects in laboratory animals. Exposure to certain DBPs may produce similar effects in people. DHS has set standards to limit exposure to THMs, HAAs, and other DBPs."

(e) Bromate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that bromate is a health concern at certain levels of exposure. Bromate is formed as a byproduct of ozone disinfection of drinking water. Ozone reacts with naturally occurring bromide in the water to form bromate. Bromate has been shown to produce cancer in rats. DHS has set a drinking water standard to limit exposure to bromate."

(f) Chlorite: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorite is a health concern at certain levels of exposure. Chlorite is formed from the breakdown of chlorine dioxide, a drinking water disinfectant. Chlorite in drinking water has been shown to affect blood and the developing nervous system. DHS has set a drinking water standard for chlorite to protect against these effects. Drinking water which meets this standard is associated with little to none of these risks and should be considered safe with respect to chlorite."

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116450, and 116460, Health and Safety Code

**CHAPTER 15.5      DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS,  
AND DISINFECTION BYPRODUCT PRECURSORS**

**ARTICLE 1.   GENERAL REQUIREMENTS AND DEFINITIONS**

**Section 64530.      Applicability of this Chapter.**

(a) Community water systems and nontransient, noncommunity water systems that treat their water with a chemical disinfectant in any part of the treatment process or which provide water that contains a chemical disinfectant shall comply with the requirements of this chapter beginning on the dates specified in paragraphs (1) or (2).

(1) Systems using approved surface water and serving 10,000 or more persons shall comply beginning January 1, 2002.

(2) Systems using approved surface water and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply beginning January 1, 2004.

(b) Transient noncommunity systems using chlorine dioxide shall comply with the requirements for chlorine dioxide in this chapter beginning on the dates specified in paragraphs (1) or (2).

(1) Systems using approved surface water and serving 10,000 or more persons shall comply beginning January 1, 2002.

(2) Systems using approved surface water and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply beginning January 1, 2004.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Section 116350, Health and Safety Code

**Section 64531. Definitions Governing Terms Used in this Chapter.**

The definitions in sections 64400 through 64402.20 of chapter 15 and sections 64651.10 through 64651.93 of chapter 17 shall govern the interpretation of terms used in this chapter.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116275 and 116350, Health and Safety Code

ARTICLE 2. MAXIMUM CONTAMINANT LEVELS FOR DISINFECTION  
BYPRODUCTS AND MAXIMUM RESIDUAL DISINFECTANT LEVELS

**Section 64533. Maximum Contaminant Levels for Disinfection Byproducts.**

(a) Using the monitoring and calculation methods specified in sections 64534, 64534.2, 64535, and 64535.2, the primary MCLs for the disinfection byproducts shown in table 64533-A shall not be exceeded in drinking water supplied to the public.

**Table 64533-A**  
**Maximum Contaminant Levels and Detection Limits for Purposes of Reporting**  
**Disinfection Byproducts**

<u>Disinfection byproduct</u>	<u>Maximum Contaminant Level, mg/L</u>	<u>Detection Limit for Purposes of Reporting (DLR), mg/L</u>
Total trihalomethanes (TTHM)	0.080	
<u>Bromodichloromethane</u>		0.0005
<u>Bromoform</u>		0.0005
<u>Chloroform</u>	0.080 total	0.0005
<u>Dibromochloromethane</u>		0.0005
Haloacetic acids (five) (HAA5)	0.060	
<u>Monochloroacetic Acid</u>		0.002
<u>Dichloroacetic Acid</u>		0.001
<u>Trichloroacetic Acid</u>	0.060 total	0.001
<u>Monobromoacetic Acid</u>		0.001
<u>Dibromoacetic Acid</u>		0.001
<u>Bromate</u>	0.010	0.005
<u>Chlorite</u>	1.0	0.02

(b) A system installing GAC, membranes, or other technology to limit disinfectant byproducts to comply with this section may apply to the Department for an extension of up to 24 months, but not beyond December 31, 2003. Applications for extensions shall include the results of disinfection byproduct monitoring, a description of the technology being installed and how it is expected to affect future disinfection byproduct levels, and a proposed schedule for compliance. If granted an extension, a system shall meet the schedule and interim treatment and monitoring requirements established by the Department.

(c) The best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts are identified in table 64533-B.

**Table 64533-B**  
Best Available Technology  
Disinfection Byproducts

<u>Disinfection byproduct</u>	<u>Best Available Technology</u>
<u>TTHM and HAA5</u>	<u>Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant</u>
<u>Bromate</u>	<u>Control of ozone treatment process to reduce production of bromate</u>
<u>Chlorite</u>	<u>Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels</u>

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116365, and 116370, Health and Safety Code

**Section 64533.5. Maximum Residual Disinfectant Levels.**

(a) Using the monitoring and calculation methods specified in sections 64534, 64534.4, 64535, and 64535.4, the MRDLs for the disinfectants shown in table 64533.5-A shall not be exceeded in drinking water supplied to the public.

**Table 64533.5-A**  
**Maximum Residual Disinfectant Level**

<u>Disinfectant Residual</u>	<u>MRDL (mg/L)</u>
<u>Chlorine</u>	<u>4.0 (as Cl<sub>2</sub>)</u>
<u>Chloramines</u>	<u>4.0 (as Cl<sub>2</sub>)</u>
<u>Chlorine dioxide</u>	<u>0.8 (as ClO<sub>2</sub>)</u>

(b) Notwithstanding subsection (a), systems may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system in excess of the levels specified in Table 64533.5-A in order to protect public health, to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm run-off events, source water contamination events, natural disasters, or cross-connection events. In such circumstances, systems shall immediately notify the Department of the source and cause of contamination, the levels of residual disinfectant, other actions being taken to correct the problem, and the expected duration of the exceedance.

(c) The best technologies, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels in this section are control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116365, and 116370, Health and Safety Code

ARTICLE 3. MONITORING REQUIREMENTS.Section 64534. General Monitoring Requirements.

(a) Analyses required pursuant to this chapter shall be performed by laboratories certified to perform those analyses by the Department, pursuant to section 116390, Health and Safety Code. Analyses shall be made in accordance with EPA approved methods as prescribed in Section 141.131 of Title 40, Code of Federal Regulations, as published in the December 16, 1998, Federal Register (Vol. 63, No. 241) and revised in the April 14, 2000, Federal Register (Vol. 65, No. 73).

(b) Sample collection, and field tests including pH, alkalinity, and chlorine, chlorine dioxide and chloramine residual disinfectants, shall be performed by a water treatment or distribution operator certified by the Department pursuant to section 106875 of the Health and Safety Code or by personnel trained to collect samples and/or perform these tests by the Department, a certified laboratory, or a certified operator.

(c) Systems shall take all samples during normal operating conditions, which exclude those circumstances covered under section 64533.5(b).

(d) A system may apply to the Department for approval to consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required. In order to qualify for this reduction in monitoring requirements a system shall demonstrate to the Department that the multiple wells produce water from the same aquifer. To make this demonstration, a system shall submit information to the Department regarding the location, depth, construction, and geologic features of each well, and water quality information for each well. The Department will use this information to determine whether the wells produce water from a single aquifer.

(e) Systems shall use only data collected under the provisions of this chapter or 40 CFR Subpart M (Information Collection Rule), as published in the May 14, 1996 Federal Register (Vol. 61, No. 94), to qualify for reduced monitoring pursuant to this article.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, and 116555, Health and Safety Code

**Section 64534.2. Disinfection Byproducts Monitoring.**

(a) Community and nontransient noncommunity water systems shall monitor for TTHMs and HAA5 at the frequencies and locations indicated in table 64534.2-A.

**Table 64534.2-A**

Routine and Increased Monitoring Frequency for TTHM and HAA5

<u>COLUMN A</u> <u>Type of System</u>	<u>COLUMN B</u> <u>Persons</u> <u>served</u>	<u>COLUMN C</u> <u>Minimum</u> <u>monitoring</u> <u>frequency</u>	<u>COLUMN D</u> <u>Sample location in the distribution</u> <u>system &amp; increased monitoring</u> <u>frequencies</u>
<u>Systems using</u> <u>approved surface</u> <u>water</u>	<u>≥10,000</u>	<u>Four samples</u> <u>per quarter</u> <u>per treatment</u> <u>plant</u>	<u>At least 25 percent of all samples</u> <u>collected each quarter at locations</u> <u>representing maximum residence</u> <u>time. Remaining samples taken at</u> <u>locations representative of at least</u> <u>average residence time in the</u> <u>distribution system and representing</u> <u>the entire distribution system,</u> <u>taking into account number of</u> <u>persons served, different sources of</u> <u>water, and different treatment</u> <u>methods<sup>1</sup>.</u>
	<u>500 - 9,999</u>	<u>One sample</u> <u>per quarter</u> <u>per treatment</u> <u>plant</u>	<u>Locations representing maximum</u> <u>residence time<sup>1</sup>.</u>
	<u>&lt; 500</u>	<u>One sample</u> <u>per year</u> <u>per treatment</u> <u>plant during</u> <u>month of</u> <u>warmest water</u> <u>temperature</u>	<u>Locations representing maximum</u> <u>residence time<sup>1</sup>. If the sample (or</u> <u>average of annual samples, if more</u> <u>than one sample is taken) exceeds</u> <u>MCL, system shall increase</u> <u>monitoring to one sample per</u> <u>treatment plant per quarter, taken at</u> <u>a point reflecting the maximum</u> <u>residence time in the distribution</u> <u>system, until system meets reduced</u> <u>monitoring criteria in paragraph (3)</u>

of this subsection.

<u>Systems using only ground water not under direct influence of surface water and using chemical disinfectant</u>	<u>≥10,000</u>	<u>One sample per quarter per treatment plant</u>	<u>Locations representing maximum residence time<sup>1</sup>.</u>
	<u>&lt;10,000</u>	<u>One sample per year per treatment plant during month of warmest water temperature</u>	<u>Locations representing maximum residence time<sup>1</sup>. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in paragraph (3) of this subsection.</u>

<sup>1</sup> If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

(1) Systems may apply to the Department to monitor at a reduced frequency in accordance with table 64534.2-B. The application shall include the results of all TOC, TTHM, and HAA5 monitoring conducted in the previous 24 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application to determine whether or not the system is eligible for the reduced monitoring specified in table 64534.2-B.

**Table 64534.2-B**  
Reduced Monitoring Frequency for TTHM and HAA5

<u>If you are a(n)...</u>	<u>serving...</u>	<u>the system may reduce monitoring if it has monitored at least one year and...</u>	<u>to this level</u>
<u>Approved surface water system which has a source water TOC<sup>1</sup> level, before any treatment, ≤ 4.0 mg/L</u>	<u>≥10,000</u>	<u>TTHM<sup>1</sup> ≤0.040 mg/L and HAA5<sup>1</sup> ≤0.030mg/L</u>	<u>One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.</u>
	<u>500-9,999</u>	<u>TTHM<sup>1</sup> ≤0.040 mg/L and HAA5<sup>1</sup> ≤0.030mg/L</u>	<u>One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.</u>
<u>System using only ground water not under direct influence of surface water and using chemical disinfectant</u>	<u>≥10,000</u>	<u>TTHM<sup>1</sup> ≤0.040 mg/L and HAA5<sup>1</sup> ≤0.030mg/L</u>	<u>One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.</u>
	<u>&lt;10,000</u>	<u>TTHM ≤0.040 mg/L and HAA5 ≤0.030mg/L for two consecutive years OR TTHM ≤0.020 mg/L and HAA5 ≤0.015mg/L for one year</u>	<u>One sample per treatment plant per three-year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which system qualifies for reduced monitoring.</u>

<sup>1</sup>TOC, TTHM, and HAA5 values based on annual averages

(2) Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which monitor quarterly) or the result of the sample (for systems which monitor no more frequently than annually) is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. Systems that do not meet these levels shall resume monitoring at the frequency specified in column C of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for TTHMs or 0.045 mg/L for HAA5. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons or systems using approved surface water and serving fewer than 500 persons, if either the TTHM annual average is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system shall go to increased monitoring identified in column D of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.080 mg/L or 0.060 mg/L for TTHMs and HAA5, respectively.

(3) Systems on increased monitoring pursuant to column D of table 64534.2-A may return to routine monitoring specified in column C of table 64534.2-A if TTHM annual average is  $\leq 0.060$  mg/L and HAA5 annual average is  $\leq 0.045$  mg/L.

(b) Community and nontransient noncommunity water systems using chlorine dioxide shall conduct monitoring for chlorite as follows:

(1) Systems shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system shall take three additional chlorite distribution system samples the following day (in addition to the daily sample required at the entrance to the distribution system) at these locations: As close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system.

(2) Systems shall take a three-sample set each month in the distribution system. The system shall take one sample at each of the following locations: As close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling shall be conducted in the same manner (as three-sample sets, at the specified locations). The

system may use the results of additional monitoring conducted under paragraph (1) to meet the monitoring requirement in this paragraph.

(3) Systems may apply to the Department to reduce monthly chlorite monitoring in the distribution system pursuant to paragraph (2) to one three-sample set per quarter after one year of monitoring during which no individual chlorite sample taken in the distribution system has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under paragraph (1). The application shall include the results of all chlorite monitoring conducted in the previous 24 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application to determine whether or not the system is eligible to reduce monitoring to one three-sample set per quarter. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under paragraph (2) exceeds the chlorite MCL or the system is required to conduct additional monitoring under paragraph (1), at which time the system shall revert to routine monitoring.

(c) Community and nontransient noncommunity systems using ozone shall monitor for bromate as follows:

(1) Systems shall take one sample per month for each treatment plant in the system using ozone. Samples shall be taken at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(2) Systems may reduce bromate monitoring from monthly to once per quarter, if the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The system shall continue monthly bromide monitoring of the source water to remain on reduced bromate monitoring. If at any time the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements, the system shall resume routine bromate monitoring pursuant to paragraph (1).

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, and 116555, Health and Safety Code

**Section 64534.4. Disinfectant Residuals Monitoring.**

(a) Community and nontransient noncommunity water systems that use chlorine or chloramines shall measure the residual disinfectant levels at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in section 64421. Systems using approved surface water may use the results of residual disinfectant concentration sampling conducted under section 64656, in lieu of taking separate samples.

(b) Community, nontransient noncommunity, and transient noncommunity water systems that use chlorine dioxide shall monitor for chlorine dioxide daily at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system shall take three chlorine dioxide distribution system samples the following day as follows:

(1) If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system shall take three samples as close to the first customer as possible, at intervals of at least six hours.

(2) If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system shall take one sample at each of the following locations: As close to the first customer as possible, in a location representative of average residence time, and as close to the furthest customer as possible (reflecting maximum residence time in the distribution system).

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, and 116555, Health and Safety Code

**Section 64534.6. Disinfection Byproduct Precursors (DBPP) Monitoring.**

(a) Systems that use approved surface water and which use conventional filtration treatment (as defined in section 64651.23) shall take one paired TOC sample (source water and treated water) and one source water alkalinity sample per month per treatment plant at a time representative of normal operating conditions and influent water quality. TOC and alkalinity in the source water shall be monitored prior to any treatment and at the same time as TOC monitoring in the treated water. TOC in the treated water shall be monitored no later than the point of combined filter effluent turbidity monitoring and shall be representative of the treated water.

(b) Systems using approved surface water with an average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system shall revert to monitoring pursuant to subsection (a) in the first month following the quarter that the annual average treated water TOC is equal to or greater than 2.0 mg/L.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, and 116555, Health and Safety Code

**Section 64534.8. Monitoring Plans.**

Each system required to monitor under this chapter shall develop and implement a monitoring plan. The monitoring plan shall be submitted to the Department for approval prior to monitoring under the plan. The system shall maintain the plan and make it available for inspection by the general public no later than 30 days following the applicable compliance date in sections 64530(a) or (b). The Department will evaluate the plan based on the following required elements:

- (a) Specific locations and schedules for collecting samples for any parameters included in this chapter, including seasonal variations if applicable.
- (b) Identification and location of treatment facilities.
- (c) Identification and location of distribution storage facilities.
- (d) Identification and location of pressure zones.
- (e) Identification and location of all raw water sources, including a discussion of flow rates and seasonal variations for each source and how the sampling plan will ensure that samples are representative of water in the distribution system.
- (f) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116530, and 116555, Health and Safety Code

ARTICLE 4 COMPLIANCE REQUIREMENTS

**Section 64535. General Requirements for Determining Compliance.**

(a) All samples taken and analyzed in accordance with Section 64534.8 shall be included in determining compliance, pursuant to 64535.2, 64535.4, and 64536.4.

(b) For violations of the MCLs in section 64533 or MRDLs in section 64533.5 that may pose an acute risk to human health, notification shall be pursuant to section 64465.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116450, and 116460, Health and Safety Code

**Section 64535.2. Determining Disinfection Byproducts Compliance.**

(a) During the first year of monitoring for disinfection byproducts under section 64534.2 the system shall comply with the following:

(1) The average of the first quarter's results shall not exceed four times the MCLs specified in section 64533.

(2) The average of the first and second quarter's results shall not exceed two times the MCLs specified in section 64533.

(3) The average of the first, second, and third quarter's results shall not exceed 1.33 times the MCLs specified in section 64533.

(b) TTHM and HAA5 MCL compliance is determined as follows:

(1) For systems monitoring quarterly, the running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected pursuant to section 64534.2(a) shall not exceed the MCLs specified in section 64533.

(2) For systems monitoring less frequently than quarterly, if the average of the samples collected under the provisions of 64534.2(a) exceeds the MCL, the system shall increase monitoring to once per quarter per treatment plant. Compliance with the MCL shall then be determined by the average of the sample that triggered the quarterly monitoring and the following three quarters of monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. After monitoring quarterly for four consecutive quarters (including the quarter that triggered the quarterly monitoring), and until such time as monitoring returns to routine monitoring pursuant to 64534.2(a)(3), compliance shall be determined pursuant to paragraph (1).

(3) If the running annual arithmetic average of quarterly averages covering any four-quarter period exceeds the MCL, the system shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(4) If a public water system fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(c) Compliance for bromate shall be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by paragraph 64534.2(c). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6. If a public water system fails to complete 12 consecutive months of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(d) Compliance for chlorite shall be based on an arithmetic average of each three-sample set taken in the distribution system as prescribed by paragraphs 64534.2(b)(1),(2) and (3). If the arithmetic average of any three-sample set exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116450, and 116460, Health and Safety Code

**Section 64535.4. Determining Disinfectant Residuals Compliance.**

(a) During the first year of monitoring for disinfection residuals under section 64534.4 the system shall comply with the following:

(1) The average of the first quarter's results shall not exceed four times the MRDLs specified in section 64533.5.

(2) The average of the first and second quarter's results shall not exceed two times the MRDLs specified in section 64533.5.

(3) The average of the first, second, and third quarter's results shall not exceed 1.33 times the MRDLs specified in section 64533.5.

(b) Chlorine and chloramines MRDL compliance is determined as follows:

(1) Compliance shall be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under subsection 64534.4(a). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(2) In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance shall be determined by including together all monitoring results of both chlorine and chloramines. Reports submitted pursuant to sections 64537 through 64537.6 shall clearly indicate which residual disinfectant was analyzed for each sample.

(c) Compliance for chlorine dioxide shall be based on consecutive daily samples collected by the system under subsection 64534.4(b).

(1) If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day either the system fails to take the required distribution system samples or one (or more) of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL. The system shall notify the Department within 48 hours of the determination, in addition to reporting to the Department pursuant to

sections 64537 through 64537.6, and notify the public pursuant to the procedures for acute health risks in section 64465, including language in subsection 64468.5(c).

(2) If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling. The system shall notify the public pursuant to the procedures for nonacute health risks in section 64464.3, including language in subsection 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at this site is also an MRDL violation and the system shall notify the public pursuant to the procedures for nonacute health risks in section 64464.3, including language in subsection 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116450, and 116460, Health and Safety Code

ARTICLE 5. TREATMENT TECHNIQUE FOR CONTROL OF DISINFECTION  
BYPRODUCT (DBP) PRECURSORS.

**Section 64536. Alternatives to the Enhanced Coagulation and Enhanced Softening  
Performance Requirements.**

(a) Systems using approved surface water and using conventional filtration treatment shall meet any one of the alternative compliance criteria in paragraphs (1) through (6) to comply with this article or comply with the requirements of section 64536.2. Systems that meet one of the criteria in paragraphs (1) through (6) shall still comply with monitoring requirements in section 64534.6.

(1) The system's source water TOC level is less than 2.0 mg/L, calculated quarterly as a running annual average.

(2) The system's treated water TOC level is less than 2.0 mg/L, calculated quarterly as a running annual average.

(3) The system's source water TOC level is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity is greater than 60 mg/L (as CaCO<sub>3</sub>), calculated quarterly as a running annual average; and either

(A) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or

(B) Prior to the applicable compliance date in subsection 64530(a) or (b), the system has applied to the Department for the approval of, and committed funds to the installation of, technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. The application to the Department shall include a description of the technology to be installed, evidence of a commitment to complete the installation, such as a signed contract, bid solicitation, or approved bond measure, and a schedule containing milestones and periodic progress reports for installation and operation of the technology. These technologies shall be installed and operating not later than June 30, 2005.

(4) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

(5) The system's source water SUVA, prior to any treatment and measured monthly, is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(6) The system's finished water SUVA, measured monthly, is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(b) Systems practicing enhanced softening that cannot achieve the TOC removals required by subsection 64536.2(a) shall comply with the alternative criteria in paragraphs (1) or (2) in lieu of complying with section 64536.2. Systems shall still comply with the monitoring requirements in section 64534.6.

(1) Softening that results in lowering the treated water alkalinity to less than 60 mg/L (as CaCO<sub>3</sub>), measured monthly and calculated quarterly as a running annual average.

(2) Softening that results in removing at least 10 mg/L of magnesium hardness (as CaCO<sub>3</sub>), measured monthly and calculated quarterly as an annual running average.

NOTE:

Authority Cited: Sections 116325, 116370 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116555, Health and Safety Code

**Section 64536.2. Enhanced Coagulation and Enhanced Softening Performance Requirements.**

(a) Systems using approved surface water and using conventional filtration treatment (as defined in section 64651.23) shall operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in this section, unless the system meets at least one of the alternative compliance criteria listed in subsection 64536 (a) or (b).

(b) Systems shall achieve the Step 1 percent reduction of TOC specified in table 64536.2-A between the source water and the combined filter effluent, unless the Department approves a system's request for alternate minimum TOC removal (Step 2) requirements under subsection (c). Systems practicing softening shall meet the Step 1 TOC removals in the far-right column (Source water alkalinity >120 mg/L) of table 64536.2-A for the specified source water TOC:

**Table 64536.2-A**  
Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening  
for Systems Using Conventional Treatment

<u>Source-Water</u> <u>TOC, mg/L</u>	<u>Required Removal of TOC</u>		
	<u>Source-Water Alkalinity, mg/L as CaCO<sub>3</sub></u> <u>0-60</u>	<u>&gt;60-120</u>	<u>&gt;120</u>
<u>&gt;2.0-4.0</u>	<u>35.0%</u>	<u>25.0%</u>	<u>15.0%</u>
<u>&gt;4.0-8.0</u>	<u>45.0%</u>	<u>35.0%</u>	<u>25.0%</u>
<u>&gt;8.0</u>	<u>50.0%</u>	<u>40.0%</u>	<u>30.0%</u>

(c) Systems using approved surface water and using conventional treatment that cannot achieve the Step 1 TOC removals required by subsection (b) due to water quality parameters or operational constraints shall apply to the Department, within three months of failure to achieve the TOC removals required by subsection (b), for approval of Step 2 removal requirements. If the Department approves the Step 2 removal requirements pursuant to subsection (d), and the system conducted monthly TOC monitoring beginning one year prior to the compliance date specified in section 64530, the Step 2 removal requirements will be retroactive to the compliance date for the purposes of determining compliance.

(d) Applications made to the Department by systems using enhanced coagulation for approval of Step 2 removal requirements under subsection (c) shall include, as a minimum, results of bench-scale or pilot-scale testing conducted under paragraph (1) of this subsection that were used to determine the alternate enhanced coagulation level, and the name of the staff or laboratory responsible for conducting the testing with a brief resume of their qualifications to conduct such testing.

(1) Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the method described in paragraphs (1) through (4) such that an incremental addition of 10 mg/L of alum (or equivalent amount of ferric salt) results in a TOC removal of  $\leq 0.3$  mg/L. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the Step 2 removal requirement for the system. Once approved by the Department, this Step 2 removal requirement supersedes the minimum TOC removal required by subsection 64536.2(a). This requirement shall be effective until such time as the Department approves a new value based on the results of a new bench-scale or pilot-scale test.

(2) Bench-scale or pilot-scale testing of enhanced coagulation shall be conducted by using representative water samples and adding 10 mg/L increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in table 64536.2-B.

**Table 64536.2-B**  
**Enhanced Coagulation Step 2 Target pH**

<u>Alkalinity</u> <u>mg/L as CaCO<sub>3</sub></u>	<u>Target pH</u>
<u>0-60</u>	<u>5.5</u>
<u>&gt;60-120</u>	<u>6.3</u>
<u>&gt;120-240</u>	<u>7.0</u>
<u>&gt;240</u>	<u>7.5</u>

(3) For waters with alkalinities of less than 60 mg/L for which the addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before

significant TOC removal occurs, the system shall add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

(4) If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the system is eligible to apply for a waiver of enhanced coagulation requirements. The application shall include the results of bench-scale or pilot-scale testing conducted under paragraph (1) of this subsection, the name of the staff or laboratory responsible for conducting the testing, and a brief resume of their qualifications to conduct such testing.

NOTE:

Authority Cited: Sections 116325, 116370 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116555, Health and Safety Code

**Section 64536.4. Disinfection Byproduct Precursor Compliance Calculations.**

(a) Systems not meeting any of the criteria identified in subsections 64536(a) or (b) shall comply with requirements contained in subsection 64536.2(a) or 64536.2(b) and shall calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining an annual average using the following method:

(1) Determine actual monthly TOC percent removal, equal to:

$(1 - (\text{treated water TOC} / \text{source water TOC})) \times 100.$

(2) Determine the required monthly TOC percent removal (from either table 64536.2-A or from subsection 64536.2(b)).

(3) Divide the value in (a)(1) by the value in (a)(2).

(4) Add together the results of (a)(3) for the last 12 months and divide by 12.

(5) If the value calculated in (a)(4) is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(b) In any month that one or more of the conditions of (a)(1) through (a)(6) are met, the system may assign a monthly value of 1.0 (in lieu of the value calculated in (a)(3)) when calculating compliance under the provisions of subsection (a).

(1) The system's source water TOC level, prior to any treatment, is less than 2.0 mg/L.

(2) The system's treated water TOC level is less than 2.0 mg/L.

(3) The system's source water SUVA, prior to any treatment, is less than or equal to 2.0 L/mg-m.

(4) The system's finished water SUVA is less than or equal to 2.0 L/mg-m.

(5) A system practicing softening removes at least 10 mg/L of magnesium hardness (as CaCO<sub>3</sub>).

(6) A system practicing enhanced softening lowers alkalinity below 60 mg/L (as CaCO<sub>3</sub>).

**NOTE:**

Authority Cited: Sections 116325, 116370 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116555, Health and Safety Code

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**Section 64536.6. Disinfection Byproduct Precursors (DBPP) Public Notification Requirements.**

(a) For systems required to meet Step 1 TOC removals in section 64536.2(a), if the value calculated under 64536.4(a)(4) is less than 1.00, the system shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(b) For systems using conventional treatment, enhanced coagulation or enhanced softening are identified as treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems. If a system fails to comply with the enhanced coagulation or enhanced softening requirements established in this article the system shall notify the public pursuant to sections 64464.3.

**NOTE:**

Authority Cited: Sections 116325, 116370 and 116375, Health and Safety Code.

Reference: Section 116350, Health and Safety Code

ARTICLE 6 REPORTING AND RECORDKEEPING REQUIREMENTS**Section 64537. General Reporting Requirements.**

Systems required to sample quarterly or more frequently, pursuant to section 64534.2, 64534.4, or 64534.6, shall report to the Department within 10 days after the end of each quarter in which samples were collected according to paragraph 64451(c), notwithstanding the provisions of paragraphs 64451(a) and (b). Systems required to sample less frequently than quarterly shall report to the Department within 10 days after the end of each monitoring period in which samples were collected.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116530, and 116555, Health and Safety Code

**Section 64537.2. Disinfection Byproducts Reporting**

Systems shall report to the Department the information specified in Table 64537.2-A.

**Table 64537.2-A**  
**Disinfection Byproducts Reporting**

*If you are a system monitoring under the requirements of section 64534.2 for...*

*you shall report...*

TTHM and HAA5

(a) on a quarterly or more frequent basis

- (1) The number of samples taken during the last quarter.
- (2) The location, date, and result of each sample taken during the last quarter.
- (3) The arithmetic average of all samples taken in the last quarter.
- (4) The annual arithmetic average of the quarterly arithmetic averages of the samples for the last four quarters.
- (5) Whether, based on 64535.2(b), the MCL was violated.

(b) less frequently than quarterly (but at least annually)

- (1) The number of samples taken during the last year.
- (2) The location, date, and result of each sample taken during the last monitoring period.
- (3) The arithmetic average of all samples taken over the last year.
- (4) Whether, based on 64535.2(b), the MCL was violated.

(c) less frequently than annually

- (1) The location, date, and result of the last sample taken.
- (2) Whether, based on 64535.2(b), the MCL was violated.

Chlorite

- (1) The number of samples taken each month for the last 3 months.
- (2) The location, date, and result of each sample taken during the last quarter.
- (3) For each month in the reporting period, the arithmetic average of all samples taken in the

month.

(4) Whether, based on 64535.2(d), the MCL was violated, and in which month it was violated.

Bromate

(1) The number of samples taken during the last quarter.

(2) The location, date, and result of each sample taken during the last quarter.

(3) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year.

(4) Whether, based on 64535.2(c), the MCL was violated.

NOTE:

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116530, and 116555, Health and Safety Code

**Section 64537.4. Disinfectants Reporting.**

Systems shall report to the Department the information specified in Table 64537.4-A.

**Table 64537.4-A**  
**Disinfectants Reporting**

If you are a system  
monitoring under the  
requirements of section  
64534.4 for...

you shall report...

Chlorine or chloramines

- (1) The number of samples taken during each month of the last quarter.
- (2) The monthly arithmetic average of all samples taken in each month for the last 12 months.
- (3) The arithmetic average of all monthly averages for the last 12 months.
- (4) Whether, based on 64535.4(b), the MRDL was violated.

Chlorine dioxide

- (1) The dates, results, and locations of samples taken during the last quarter.
- (2) Whether, based on 64535.4(c), the MRDL was violated.
- (3) Whether the MRDL was violated in any two consecutive daily samples and whether the resulting violation was in the distribution system or at the treatment plant.

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116530, and 116555, Health and Safety Code

**Section 64537.6. Disinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening Reporting.**

(a) Systems required to meet the enhanced coagulation or enhanced softening requirements in section 64536.2(a) or (b) shall report the following:

(1) The number of paired (source water and treated water) samples taken during the last quarter.

(2) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.

(3) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal.

(4) Calculations for determining compliance with the TOC percent removal requirements, as provided in section 64536.4(a).

(5) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in section 64536.2 for the last four quarters.

(b) Systems meeting one or more of the alternative compliance criteria in section 64536(a) or (b), in lieu of meeting the requirements in section 64536.2(a) or (b), shall report the following:

(1) The alternative compliance criterion that the system is using.

(2) The number of paired samples taken during the last quarter.

(3) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.

(4) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in sections 64536(a)(1) or (3) or of treated water TOC for systems meeting the criterion in section 64536(a)(2).

(5) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in section 64536(a)(5) or of treated water SUVA for systems meeting the criterion in section 64536(a)(6).

(6) The running annual average of source water alkalinity for systems meeting the criterion in section 64536(a)(3) and of treated water alkalinity for systems meeting the criterion in section 64536(b)(1).

(7) The running annual average for both TTHM and HAA5 for systems meeting the criterion in section 64536(a)(3) or (4).

(8) The running annual average of the amount of magnesium hardness removal (as CaCO<sub>3</sub>, in mg/L) for systems meeting the criterion in section 64536(b)(2).

(9) Whether the system is in compliance with the particular alternative compliance criterion in section 64536(a) or (b).

**NOTE:**

Authority Cited: Sections 116325 and 116375, Health and Safety Code.

Reference: Sections 116350, 116385, 116530, and 116555, Health and Safety Code